(a) contacting the intended site of delivery of said pharmaceutical composition with an agent adequate to cause a temporary disruption of the mucosal lining covering said gastrointestinal or genitourinary cells; and

(b) concurrently or subsequent to said contacting of step (a), contacting said gastrointestinal or genitourinary cells with said pharmaceutical composition, wherein said pharmaceutical composition comprises an adenoviral vector comprising a nucleic acid encoding an antigen; whereby expression of said antigen induces an immune response in said recipient specific to said antigen.

30. The method of claim 29, wherein said antigens are selected from the group consisting of viral antigens, bacterial antigens and mycoplasma antigens.

31. The method of claim 30, wherein said antigens are viral antigens, bacterial antigens and mycoplasma antigens derived from microbes that cause diseases in the gastrointestinal or genitourinary tracts.

32. The method of claim 31, wherein said method vaccinates said recipient such that the onset of infection by viral, bacterial, or mycoplasmic pathogens is inhibited or prevented upon challenge to recipient by said pathogens.

Remarks

Claims 1-28 have been cancelled without prejudice. Applicant fully reserves the right to pursue subject matter affected by this amendment in other pending or later filed continuation/divisional application. New claims 29-32 are added for which support is found throughout the specification. The following remarks are provided in response to the rejections made in the outstanding office action dated March 15, 2002. Applicants believe that the remarks and amendments herein address the issues of the outstanding office action, but point out that this response will be followed by a supplementary response and a declaration from Dr. Gauldie (Gauldie Declaration) which will more thoroughly address the pending issues.